

KEYS TO THE FLORA OF FLORIDA -- 13, *VITIS*
(VITACEAE)

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ABSTRACT

Vitis (Vitaceae) is represented in Florida by 6 species. *Vitis aestivalis* is treated as consisting of 2 varieties. *Vitis rotundifolia* is believed to be formed of 3 varieties, with var. **pygmaea**, an endemic of the Florida peninsula, described as new. *Vitis simpsonii* is interpreted as specifically distinct from *V. cinerea*. Typical *Vitis cinerea* is excluded as based on misidentifications. An amplified key is given to the Florida taxa.

KEY WORDS *Vitis*, Vitaceae, Florida flora.

"It is really astonishing to behold the Grape-Vines in this place. From their bulk and strength, one would imagine they were combined to pull down these mighty trees to the earth; when in fact, amongst other good purposes, they serve to uphold them. They are frequently nine, ten, and twelve inches in diameter, and twine round the trunks of the trees, climb to their very tops, and then spread along their limbs, from tree to tree, throughout the forest." William Bartram, *Travels*, 1791: 86-87. Near mouth of Tocoj Creek, east bank of St. Johns River, due west of St. Augustine, St. Johns County.

Species of *Vitis* (Vitaceae) are instantly recognized as (usually) high-climbing lianas with simple, palmately veined leaves and sweet, delectable to unpalatable, juicy fruits. Some are found widely throughout the state, their stems suspended beneath the branches of

hammock trees and their foliage and fruits hidden and inaccessible in the canopy above. Others are restricted to bottomlands of major north Florida rivers or coastal shell mounds; one charming variant is known only from small areas of sand pine scrub in the central peninsula. But all of them are so unclearly separated by subtle features of morphology that misidentifications are common, by amateur enthusiasts and professional botanists alike.

These uncertainties have long stimulated efforts to determine the species and establish their characteristics and limits. J. K. Small (Manual of the Southeastern Flora. 1933) clearly understood most of the species and provided keys and descriptions still useful today. L. H. Bailey (Gentes Herbarum 3:151-244. 1934) went far toward working out their taxonomy, while G. K. Brizicky (J. Arnold Arbor. 46:48-67. 1965), W. H. Duncan (Sida 3:1-76. 1967), and R. K. Godfrey (Trees, Shrubs, and Woody Vines. 1988) provided descriptions, keys, and illustrations.

In recent decades three different parties have attempted to resolve remaining problems encountered in *Vitis*, both in the distinguishing characteristics and in the nomenclature and classification of the species. A major but often overlooked review of the Florida species was undertaken by D. J. Rogers and J. A. Mortensen (Proc. Florida State Hort. Soc. 92:286-289. 1979). But although the authors were Florida-based and provided much original insight, their focus was on horticultural use which encouraged them to emphasize small differences (they recognized five varieties of *Vitis aestivalis*) and to overlook matters of nomenclature.

Two significant taxonomic studies soon followed, of *Vitis* throughout the Southeast -- overlapping both in chronology and in purpose -- one in North Carolina (B. L. Comeaux at North Carolina State University), and one in Georgia (M. O. Moore at the University of Georgia). Through their efforts the limits of the species are now relatively well understood and their nomenclatural entanglements have been resolved. Even so, the Florida species are poorly defined in the

eyes of many workers. And there is still room for useful refinement of the entities that form this component of the Florida flora.

The Simpson Grape, *Vitis simpsonii*, has been confused and often combined with the Summer Grape, *Vitis aestivalis* (Rogers & Mortensen, 1979). In the peninsula it is a plant of low, wet thickets, and can further be separated by several morphological characters, perhaps the best being the yellow-green pubescence and acuminate-tipped lobes. It never (or very rarely) has the deeply lobed, round-bottomed sinuses of *V. aestivalis*, which has bluish-green pubescence and rounded to acute lobes. Its nomenclature was clarified by B. L. Comeaux & P. R. Fantz (Sida 12:279-286. 1987), though they treated it as *V. cinerea* var. *floridana*. Although there may be intergradation with typical *V. cinerea* to the north and west, as maintained by Comeaux & Fantz (1987) and M. O. Moore (Sida 14:339-367. 1991), in Florida the differences in habitat and morphology are sufficient to justify retention of it at specific rank, as did Small (1933) and Bailey (1934).

The Florida scrub, a unique association of the central peninsula characterized by excessively drained sands and numerous endemic plant species (S. P. Christman & W. S. Judd, Florida Sci. 53:52-73. 1990), holds an unnamed variant of *Vitis rotundifolia*. This taxon, found in only a few locations in Polk and Highlands counties, has been known for many years, but without receiving appropriate taxonomic recognition. It appears first to have been noted by James B. McFarlin, a graduate student of the University of Michigan who spent many months in field work in Florida in the early 1930s, compiling a thesis on the flora of the Florida scrub in 1935, but in some manner failing to complete requirements for a degree. Yet his unpublished thesis has been a source of information and inspiration for other workers, some of whom have retained his manuscript names in later publications (e.g., J. Beckner, re *Lupinus aridorum* McFarlin ex Beckner, Phytologia 50:209-211. 1982).

The endemic *Vitis* noted by McFarlin was also encountered by Rogers & Mortensen (1979:288). Other than noting it to be a "small-

leaved form," they gave it no description. They commented: "We believe that this form should be recognized and will, after further investigation, probably designate it as *V. munsoniana* forma *pygmaea*."

Rogers & Mortensen were surely correct in suggesting the small-leaved scrub *Vitis* to be related to *V. munsoniana* (or *V. rotundifolia* var. *munsoniana*). The scrub plant, adjacent to (though separated by habitat from) var. *munsoniana*, is perhaps some distance south of typical *V. rotundifolia*. The McFarlin thesis (which Rogers & Mortensen did not mention and perhaps did not see) also related the scrub plant to var. *munsoniana*, with a simple key for their separation.

That the labors of McFarlin, unacknowledged by his parent institution and unseen by later workers who unknowingly plowed the same fields, not be entirely lost, the name he used in manuscript and on label (noted by Rogers & Mortensen) is here formally employed in recognizing this small Florida endemic. His characters, with some modification, are also used in the accompanying amplified key.

***Vitis rotundifolia* Michx. var. *pygmaea* McFarlin ex D. B. Ward, var. nov.** TYPE: Holotype: United States, Florida, Highlands Co.: sand dunes, Lake Jackson, Sebring, J. B. McFarlin 5707, 9 June 1931 ["flowers"] (US 1728170). Paratypes: Florida, Highlands Co.: sand dunes, Lake Jackson, Sebring, J. B. McFarlin 6524, 15 Aug 1931 ["fruits"] (US 1728171).

Similis V. rotundifolia var. *munsoniana*, *sed parvus, saepe non scandens, foliis 2 ad 3.5 cm. latus, raphe carina anguste.*

The writer is grateful to Dan H. Nicolson for images of the McFarlin types, and to Robert K. Godfrey for his patient exposition of the distinctions of the Florida grapes as seen in the field.

VITIS L. Grapes¹

1. Tendrils simple, unforked; bark of main stems tightly adhering for several years before beginning to shred; lenticels evident on both young and older stems; flowers and berries in globular or slightly elongated bunches; leaves glossy green, glabrous (except for tufts of hairs in axils of main veins on lower surface), dentate, unlobed (or with one exceptionally large tooth on each margin). High-climbing woody vine (usually). Moist to dry soils. Spring.

MUSCADINE GRAPE. *Vitis rotundifolia* Michx.

- a. Berries >1.5 cm. dia., pulpy, with thick and tough skin, usually in clusters of 2-8; seeds >8 mm. long. Thickets, hammocks. Panhandle and north Florida, south into upper peninsula; common. [*Muscadina rotundifolia* (Michx.) Small]

MUSCADINE GRAPE (typical). var. **rotundifolia**

- a. Berries <1.0 cm. dia., with little pulp and thinner skin, usually in clusters of 12-30 (or fewer in var. *pygmaea*); seeds <6 mm. long.

- b. Leaves 4-8 cm. dia.; raphe of seed broad and rounded; vines high-climbing. Hammocks, pinelands. Peninsula; common. Endemic. [*Muscadina munsoniana* (Simpson) Small; *Vitis munsoniana* Simpson]

BULLACE GRAPE

var. **munsoniana** (Simpson ex Munson) M. O. Moore

- b. Leaves 2-3.5 cm. dia.; raphe of seed narrow and ridged; vines usually shrub-like or trailing, at times weakly climbing. Sand pine scrub. Central peninsula (Polk, Highlands counties); rare. Endemic.

PYGMY GRAPE. var. **pygmaea** McFarlin ex D. B. Ward

1. The "amplified key" format employed here is designed to present in compact form the basic morphological framework of a conventional dichotomous key, as well as data on habitat, range, and frequency. This paper is a continuation of a series begun in the 1970s (vide *Phytologia* 35: 404-413. 1977). Keys are being prepared for all genera of the Florida vascular flora, but the present "amplified" series is restricted to genera where a new combination is required or a special situation merits extended discussion.

1. Tendrils nearly all forked; bark of main stems beginning to shred in second year; lenticels inconspicuous or absent except on young stems; flowers and berries usually in elongated bunches; leaves dull green to tawny, glabrous to quite hairy beneath, dentate to serrate, unlobed or scarcely so, to deeply lobed.
2. Leaves glabrous or very nearly so, the fully expanded blades with pubescence limited to tufts of hairs in axils of main veins on lower surface and sometimes on upper petiole, green beneath, never glaucous.
 3. Leaves unlobed or scarcely lobed, with acute to short-acuminate tips; twigs green to brown. Robust high-climbing woody vine. Moist to dry thickets, fence rows. Throughout; frequent (rare in s. peninsula). Spring. [*Vitis baileyana* Munson; *Vitis cordifolia* Lam.]
FROST GRAPE. **Vitis vulpina** L.
 3. Leaves strongly 3-lobed, the lobes with long-acuminate tips; twigs reddish or purplish. Slender high-climbing woody vine. Riverbottoms. Central panhandle (Jackson, Gadsden: Apalachicola River floodplain), disjunct to north Florida (Suwannee: Suwannee River); rare and local. Spring.
RED GRAPE, CATBIRD GRAPE. **Vitis palmata** Vahl
2. Leaves pubescent, more so beneath, the hairs either short-spreading or cobwebby or both, rarely so sparse as to be subglabrous, if so, then glaucous beneath.
 4. Hairs on underside of leaf forming a dense, felted, evenly matted tomentum that wholly conceals the surface of fully expanded blades (although not always the major veins), the pubescence silvery-white to golden-orange; leaf blades shallowly toothed, angularly lobed (or deeply lobed on shoots). Woody vine, usually not high-climbing. Hammocks, sand pine scrub, shell mounds along the coasts. South and central peninsula (n. to Dixie, Flagler counties); infrequent. Spring. [*Vitis coriacea* Shuttlew.]
CALUSA GRAPE. **Vitis shuttleworthii** House
 4. Hairs on underside of leaf either dense or sparse, but in fully expanded blades the surface visible (at least under

magnification) between the hairs, the pubescence rusty to dull whitish.

5. Leaves with blue-green cast beneath, the tips rounded to acute, commonly unlobed or with slight angular shoulders, but usually with some vigorous shoots with deeply 3-5-lobed leaves in which the sinuses are broadly rounded with no primary veins terminating at the sinus margins; internodes terete; shade-grown shoots uniformly green (or uniformly red-pigmented in sun). Robust high-climbing woody vine, to 70 cm. circ. Moist to dry thickets, open woodlands; common. Spring.

SUMMER GRAPE, PIGEON GRAPE.

Vitis aestivalis Michx.

- a. Leaf margins coarsely serrate. Panhandle and north Florida. [*Vitis rufotomentosa* Small]
var. **aestivalis**

- a. Leaf margins entire to crenate or obscurely and irregularly serrate. Peninsula. [*Vitis simpsonii*, misapplied; *Vitis smalliana* Bailey]
var. **smalliana** (Bailey) Comeaux

5. Leaves with yellow-green cast beneath, the tips acute to short-acuminate, unlobed or with angular lobes with shallow and irregular sinuses with primary veins terminating at the sinus margins; internodes (for 3-5 internodes beyond stem tip) with flattened surfaces (perceptibly 4-6 sided when rolled between the fingers); shade-grown shoots green with red-pigmented nodes (sun-grown shoots uniformly red-pigmented). Moderately robust, low-climbing or often trailing woody vine. Wet woodlands, margins of marshes. Panhandle and north Florida, into northern peninsula (Alachua, Marion counties); frequent. Spring. [*Vitis aestivalis* Michx. ssp. *simpsonii* (Munson) Rogers; *Vitis austrina* Small; *Vitis cinerea* Engelm. ex Millardet var. *floridana* Munson; *Vitis sola* Bailey]
SIMPSON GRAPE. *Vitis simpsonii* Munson

Excluded names:

Vitis cinerea (Engelm. in Gray) Engelm. ex Millardet Downy Grape

Although often reported for Florida (Small, 1933; Godfrey & Wooten, 1981; Clewell, 1985; Wunderlin, 1998), no specimens of *V. cinerea* var. *cinerea* have been seen from the state. (Some specimens so named are *V. aestivalis*.) *V. cinerea* var. *floridana* is frequent, but is here treated as *V. simpsonii* (q.v.).